



REPLACEMENT SHEET
APPLICANT(S): Grotendorst and Neff
TITLE: CONNECTIVE TISSUE GROWTH FACTOR
FRAGMENTS AND METHODS AND USES THEREOF
Application No.: 10/658,856 File Date: September 9, 2003
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ccggccgacagccccgagacgacagccccggcggtcccggtccccacacctccgaccaccgcca
gcgctccaggccccggcgtccccgctcgccaccgcgcctccgctccgcccgcagtgc
accATGACCGCCGCCAGTATGGGCCCGTCCCGCTCGCCTCGTGGTCCTCCTC
M T A A S M G P V R V A F V V L L

GCCCTCTGCAGCCGGCCGGCCGTGGCCAGAACTGCAGCAGGGCCGTGCCGGTGCCCCGGAC
A L C S R P A V G Q N C S G P C R C P D
| -> exon 2

GAGCCGGCGCCCGCTGCCCGGGGGCGTGAGCCTCGTGGACGGCTGCCGGTGCTGC
E P A P R C P A G V S L V L D G C G C C
C C

CGCGTCTGCGCCAAGCAGCTGGCGAGCTGTGCACCGAGCGCGACCCCTGCGACCCGCAC
R V C A K Q L G E L C T E R D P C D P H

AAGGGCCTTTCTGTGACTTCGGCTCCCGGCCAACCGCAAGATCGGCGTGTGCACCGCC
K G L F C D F G S P A N R K I G V C T A
| ->

AAAGATGGTGCTCCCTGCATCTCGGTGGTACGGTGTACCGCAGCGGAGAGTCCTTCCAG
K D G A P C I F G G T V Y R S G E S F Q
exon 3

AGCAGCTGCAAGTACCAAGTGCACGTGCCTGGACGGGGCGGTGGCTGCATGCCCTGTGC
S S C K Y Q C T C L D G A V G C M P L C

AGCATGGACGTTCGTCTGCCAGCCCTGACTGCCCTCCGAGGAGGGTCAAGCTGCC
S M D V R L P S P D C P F P R R V K L P

GGGAAATGCTGCGAGGAGTGGGTGTGACGAGCCAAAGGACCAAACCGTGGTGGCCT
G K C C E E W V C D E P K D Q T V V G P

GCCCTCGGGCTTACCGACTGGAAGACACGTTGGCCCAGACCCAACTATGATTAGAGCC
A L A A Y R L E D T F G P D P T M I R A
| -> exon 4

AACTGCCTGGTCCAGACCAACAGAGTGGAGCGCCTGTTCCAAGACCTGTGGATGGCATT
N C L V Q T T E W S A C S K T C G M G I

TCCACCCGGGTTACCAATGACAACGCCCTGCAGGCTAGAGAAGCAGAGCCGCTGTGC
S T R V T N D N A S C R L E K Q S R L C

FIG. 2A

ATGGTCAGGCCTTGCAGCTGACCTGGAAGAGAACATTAAGAAGGGCAAAAGTCATC
M V R P C E A D L E E N I K K G K K C I
| -> exon 5

CGTACTCCC AAAATCTCCAAGCCTATCAAGTTGAGCTTCTGGCTGCACCAGCATGAAG
R T P K I S K P I K F E L S G C T S M K

ACATACCGAGCTAAATTCTGTGGAGTATGTACCGACGGCCGATGCTGCACCCCCCACAGA
T Y R A K F C G V C T D G R C C T P H R

ACCACCACCCCTGCCGGTGGAGTTCAAGTGCCCTGACGGCGAGGTATGAAGAAGAACATG
T T T L P V E F K C P D G E V M K K N M

ATGTTCATCAAGACCTGTGCCATTACAACGTCCGGAGACAATGACATCTTGAA
M F I K T C A C H Y N C P G D N D I F E

TCGCTGTACTACAGGAAGATGTACGGAGACATGGCATGAagccagagagtgagagacatt
S L Y Y R K M Y G D M A *

aactcattagactgaaacttgaactgattcacatctcattttccgtaaaaatgattcagta
gcacaaggattttaaatctgttttctaactggggaaaagattcccaccaattcaaaacat
tgtccatgtcaaacaaatagtctatcttccccagacactggttgaagaatgttaagacttg
acagtggaaactacatttagtacacagcaccagaatgtatattaagggtgtggctttaggagcgt
gggagggtaccggcccggttagtatcatcagatcgactcttatacggataatatgcctgctat
ttgaagtgtattgagaaggaaaattttagcgtgctcactgacctgcctgttagccccagtgac
agctaggatgtgcattctccagccatcaagagactgagtcagttgttccttaagtcagaaca
gcagactcagctcgacattctgattcaagactgatcggatcggtatcgttcctttagtgcatt
agactggacagctgtggcaagtgaatttgcctgttaacaagccagatttttaaaatttat
tgtaaatattgtgtgtgtgttatatatatatatgtacagtatctaagtt
aatttaaagtgtttgtgccttttatattttgttttaatgctttgatattcaatgttagcc
tcaatttctgaacaccataggtagaatgtaaagctgtctgatcgtcaagcatgaaatgga
tacttatatggaaattctgctcagatagaatgacagtcgtcaaaacagattgtttgcaagg
ggaggcatcagtgtctggcaggctgattctaggttagaaatgtggtagctcacf

FIG. 2B

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ccccggccgacagccccgagacgacagccccggcgcgcccggtccccacacctccgaccaccgcca
gcgctccaggcccccgctccccgtcgccgcaccgcgcctccgctccgcccgcagtgcaca
accATGACCGCCGCCAGTATGGGCCCCGTCCCGCTCGCCTCGTGGTCCTCCTC
M T A A S M G P V R V A F V V L L

GCCCTCTGCAGCCGGCCGGCCGTGGCCAGAACTGCAGCAGGGCCGTGCCGGTGCCGGAC
A L C S R P A V G Q N C S G P C R C P D
| -> exon 2

GAGCCGGCGCCCGCTGCCCGGGGGCGTGAGCCTCGTGGACGGCTGCCGGCTGCTGC
E P A P R C P A G V S L V L D G C G C C

CGCGTCTGCGCCAAGCAGCTGGGCGAGCTGTGCACCGAGCGCGACCCCTGCGACCCGCAC
R V C A K Q L G E L C T E R D P C D P H

AAGGGCCTTTCTGTGACTTCGGCTCCCCGGCCAACCGCAAGATCGGCGTGTGCACCGCC
K G L F C D F G S P A N R K I G V C T A
| ->

AAAGATGGTGCTCCCTGCATCTCGGTGGTACGGTGTACCGCAGCGGAGAGTCCTTCCAG
K D G A P C I F G G T V Y R S G E S F Q
exon 3

AGCAGCTGCAAGTACCAAGTGCACGTGCCTGGACGGGGCGGTGGCATGCCCTGTGC
S S C K Y Q C T C L D G A V G C M P L C

AGCATGGACGTTCGTCTGCCAGCCCTGACTGCCCTCCGAGGAGGGTCAAGCTGCC
S M D V R L P S P D C P F P R R V K L P

GGGAAATGCTGCGAGGAGTGGGTGTGACGAGCCAAGGACCAAACCGTGGTGGCCT
G K C C E E W V C D E P K D Q T V V G P

GCCCTCGGGCTTACCGACTGGAAGACACGTTGGCCAGACCCAATATGATTAGAGCC
A L A A Y R L E D T F G P D P T M I R A
| -> exon 4

AACTGCCTGGTCCAGACCAACAGAGTGGAGCGCCTGTTCCAAGACCTGTGGATGGCATT
N C L V Q T T E W S A C S K T C G M G I

TCCACCCGGGTTACCAATGACAACGCCTCCTGCAGGCTAGAGAAGCAGAGCCGCTGTGC
S T R V T N D N A S C R L E K Q S R L C

FIG. 21 2A

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ATGGTCAGGCCTTGCAGCTGACCTGGAAGAGAACATTAAGAAGGGCAAAAGTCATC
M V R P C E A D L E E N I K K G K K C I
| -> exon 5

CGTACTCCAAAATCTCCAAGCCTATCAAGTTGAGCTTCGGCTGCACCAGCATGAAG
R T P K I S K P I K F E L S G C T S M K

ACATAACCGAGCTAAATTCTGTGGAGTATGTACCGACGGCCGATGCTGCACCCCCCACAGA
T Y R A K F C G V C T D G R C C T P H R

ACCACCAACCTGCCGGTGGAGTTCAAGTGCCCTGACGGCGAGGTATGAAGAAGAACATG
T T T L P V E F K C P D G E V M K K N M

ATGTTCATCAAGACCTGTGCCATTACAACGTCCGGAGACAATGACATCTTGAA
M F I K T C A C H Y N C P G D N D I F E

TCGCTGTACTACAGGAAGATGTACGGAGACATGGCATGAagccagagagtgagagacatt
S L Y Y R K M Y G D M A *

aactcatttagacttggaaacttgaactgattcacatctcattttccgtaaaaatgattcagta
gcacaaggtaattaaatctgtttcttaactggggaaaagattcccaccaattcaaacat
tgtgccatgtcaaacaatagtctatcttccccagacactgggttaagaatgttaagacttg
acagtggaaactacatttagtacacagcaccagaatgtatattaagggtggctttaggagcgt
gggagggtaccggcccggttagtatcatcagatcgactcttatacggataatgcctgctat
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aatttaaagtgtttgtgccttt
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ggaggcatcgtgtttggcaggctgattcttaggttaggaaatgtggtagctcagcgt

FIG. 2-2⁰ 2B